DOCUMENT RESUME

ED 260 963 SO 016 723

AUTHOR Warner, Deborah J.
TITLE Perfect in Her Place. Women at Work in Industrial America.
INSTITUTION Smithsonian Institution, Washington, D.C.
PUB DATE 81
NOTE 26p.; This publication was prepared in conjunction with an exhibit at the National Museum of American History, Smithsonian Institution. Lithograph reproductions may not reproduce clearly.
PUB TYPE Viewpoints (120) -- Historical Materials (060)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Colonial History (United States); Economic Development; Economic Factors; Economic Opportunities; *Females; *Labor Economics; *Labor Force; Sex Role; *United States History; Womens Studies; Working Class

ABSTRACT

The economic role of American women is traced from colonial times through the 19th century. In colonial America women shared the economic responsibilities of family livelihood with their husbands and were engaged primarily in the production of food and clothing. Early 19th century America saw a redefinition of the social and economic spheres of men and women. For white Americans, a sentimentalizing of the home led to a decrease in women's economic activity while black women continued to play a major role in agricultural production. The necessity of competing with foreign manufacturers led to the demand for cheap factory labor, which in turn led to the employment of women in the latter half of the 19th century. This factory work typically provided a limited range of jobs under poor working conditions. Like manufacturing, commerce and the entertainment industry also gave employment to women in the late 1800's, while the beginning of the era of science at the end of the 1800's led to female employment in data processing. Throughout the 1800's, several occupations were considered properly female, including health care and teaching. (LP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED260963

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

PERFECT IN HER PLACE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Deborah J Warner

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP016 723

PERFECT IN HER PLACE

Women at Work in Industrial America

Deborah J. Warner

Published for the National Museum of American History
by the Smithsonian Institution Press
Washington, D.C. 1981

This publication was prepared in conjunction with an exhibit at the National Museum of American History, Smithsonian Institution. The exhibit was designed by Deborah Bretzfelder and developed by Deborah J. Warner, assisted by Barbara Dennis and Margaret Sone, with the help and advice of many other Smithsonian colleagues.

Copyright © 1981 by Smithsonian Institution. All rights reserved

Library of Congress Cataloging in Publication Data

Warner, Deborah Jean.
Perfect in her place.

"Prepared in conjunction with an exhibit at the National Museum of American History, Smithsonian Institution."
Includes bibliographical references.
Supt. of Docs. no.: SI 1.2:W84
1. Women—Employment—United States—History.
I. National Museum of American History (U.S.)
II. Title.
HD6095.W198 331.4'0973
81-607826
AACR2

The preindustrial manufacture of cloth. From Edward Hazen, *The Panorama of Professions and Trades* (Philadelphia, 1836), p. 42.

Each animal, however weak or small, "is perfect in all its parts, and admirably calculated for the station it is to occupy, and the duties it has to perform, in the creation."[1]

American women have always worked. Like men, they have worked because of economic necessity. Like men, women hope to derive from their work a measure of satisfaction and personal identity. Like men, they must adapt to a frequently changing social and economic order. Although both men and women are said to be defined by their gender, where women are concerned theory has always been easily adjusted to satisfy economic demands: whenever and wherever women were needed, it was quickly decided that they were biologically or spiritually destined. Popular rhetoric about such supposedly natural feminine attributes as patience, perseverance, and manual dexterity has been used repeatedly to justify the employment of women in low-status, dead-end, insecure jobs, at wages much lower than men would accept.

In colonial America, where none but the very richest men could afford to support their families alone, most marriages were economic partnerships. Besides bearing and raising children, women at home cooked, cleaned, and sewed. They made soap and candles, raised and preserved fruits and vegetables, churned milk into butter, gathered eggs—and they sold the surplus at market or bartered it for other goods and services. As women

have since time immemorial, they spun—mostly wool and flax. Some families wove on their own looms, but many sent their yarn to a local weaver, who was as often a woman as a man. With professional medical care scarce, women delivered babies, nursed friends and family through injuries and illnesses, and laid out the dead. In their spare time, women worked with their husbands—or alone after his death—on their farm or in their store, tavern, print shop, or other small business. This traditional pattern remained unchanged for most Americans throughout the nineteenth century.

As the United States developed from a predominantly rural and agricultural nation into an urban and industrial one during the nineteenth century, the nature and location of work changed. Unmarried women followed "work" as it moved out into factories, shops, schools, and offices. Married women stayed home, and looked for productive work that would not conflict with their maternal and domestic chores. They took in boarders. They did piece work for local industries. They continued to sell their handmade products at local markets or, if they were more genteel, through so-called women's exchanges. Although these various activities brought in money, they have seldom been recognized as "work," and the women, accordingly, have not been considered as having been gainfully employed.

As households changed from units of production to units of consumption, the housewife's domestic role changed, but its economic importance did not lessen. Food was the single largest item in the budget of most families, and a wise shopper could save as much as her "working" daughter could earn.

For most Americans the early nineteenth century was a particularly unsettling time. Few knew, with the certainty that their parents and grandparents had enjoyed, who they were and where they fit into the natural order. In politics, in economics, in social structure, in religion, old patterns were disrupted. Universal white manhood suffrage expanded the ranks of those eligible to vote. Industrial and mercantile pursuits brought new fortunes and failures—and accentuated the gap between rich and poor. Population was expanding rapidly (and soon, under the impact of immigration, its ethnic diversity would change as well). Evangelical religions attracted wider and more enthusiastic followings than could the descendants of colonial rationalism.

In response to this growing turmoil, Americans began to sentimentalize the home. Stable and secure, home offered sanctuary for humane values trampled underfoot in the public arena of individualism and commercial exploitation. And at the heart of Home Sweet Home was Woman, pure and pious, serving as guardian of those aspects of the old order that men were reluctant to relinquish, but that they could no longer afford to pursue in their headlong rush into the new.

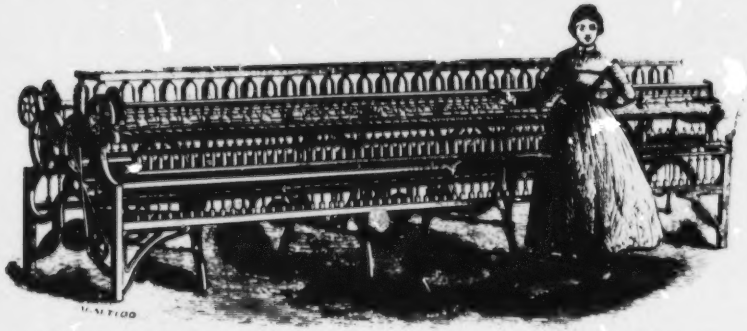
Together with the definition of separate spheres for men and women went a new awareness of gender differences and a popular agreement that culturally accepted

Picking cotton on a Mississippi plantation. *Keystone Lantern Slide.*

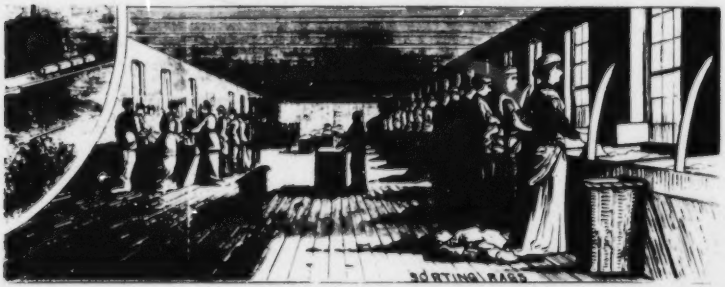
similarities between all women were stronger than actual differences between individual women. Different evolved into opposite, and the traits appropriate to one sex were seen as the antithesis of those appropriate to the other. There was also a new appreciation of women's gender-specific attributes as socially useful strengths. Rather than being seen as simply lower than men on the Great Chain of Being, nineteenth-century women were seen as perfect in their place. Those who would restrict a woman's movements defined her place narrowly, while those who would expand her options identified jobs in the world at large for which her feminine traits were particularly adapted.

Hoping the new world would open new opportunities for women, equal-rights feminists strove to keep alive the egalitarian promises of the American Revolution. Newly established schools for women promised "all the advantages for thorough and complete education that are enjoyed by the other sex in our best appointed colleges."[2] Early feminists argued that the self-evident truths of the Declaration of Independence applied to all, male and female. But this approach proved futile against the sentimental ideology Americans were developing to ease their adjustment into modernity.

While white Americans fussed over proper feminine behavior, most black women in America worked in the fields, side by side with men, planting, cultivating, and picking tobacco and cotton. Sojourner Truth, abolitionist and woman's rights advocate, eloquently exposed the



A spinning frame. From James Geldard, *Hand-book on Cotton Manufacture* (New York, 1867).



Sorting rags at the Albion Paper Mills, Holyoke, Massachusetts. From *Scientific American* 42 (1880) p. 207.

disparity between the myth and the reality of working-class lives: "Look at my arm. I have ploughed and planted and gathered into barns, and no man could head me—and ain't I a woman? I could work as much and eat as much as a man—when I could get it—and bear the lash as well! And ain't I a woman? I have born thirteen children, and seen most of 'em sold into slavery, and when I cried out with my mother's grief, none but Jesus heard me—and ain't I a woman?"[1]

Large-scale industry in the United States began in the textile mills of New England around 1800. By the 1820s factory production of textiles had begun to displace household manufacture, and by midcentury the new system was in effect for many types of goods and in numerous locations. Basic elements of the new system included the use of water or steam power, specialized machinery, and a narrow subdivision of labor. Unlike skilled artisans, most factory workers needed a minimum of training. Easily replaceable, they could command but minimum wages.

To compete successfully with foreign manufacture, American factories needed cheap labor. Even if able-bodied men had been available in sufficient numbers, public sentiment held that they should not be diverted from agriculture, commerce, or other manly pursuits. Women, however—especially spinsters, those young women no longer needed at home to spin textile fibers—presented an untapped resource. Proponents of industry promised that the new factories would employ

Button-making at the Scovill Manufacturing Company, Waterbury, Connecticut. From *Scientific American* 41 (1879), p. 375.

persons who would otherwise be idle, thus enabling women and children to become "useful members of society."[4] In the course of the nineteenth century American women—like their counterparts in industrialized western Europe—provided a large portion of the labor in such diverse industries as those involving textiles, clothing, boot and shoemaking, printing, bookbinding, brass products, watches, food packing, pharmaceuticals, tobacco, paper boxes, currency, ammunition, pottery, and photographic supplies.

At home, people worked hard but at their own pace. In factories, the machinery set the pace. The glorification of the "work ethic" in story, sermon, and song coincided with the period of industrialization and served in part to ease the adjustment to the discipline of factory life. But the American Dream promised that hard work would be rewarded with wealth sufficient to purchase luxury and leisure. The irony in the situation was obvious, especially as it applied to the children who formed a conspicuous part of the industrial labor force all through the nineteenth century:

The golf links lie so near the mill
That almost every day
The laboring children can look out
And see the men at play.[5]

Cotton was the first major industry in the United States. In the early years of the nineteenth century it became the most important commercial crop in the South, and the raw material for most northern facto-

Weaving cotton textiles, pictured on two-dollar banknotes issued by the Sanford Bank in Maine and dated 1861.

ries. Until 1850 it was America's leading export. Working on a project suggested by Catharine Greene, Eli Whitney invented the cotton gin in 1793. Samuel Slater and associates opened the first American spinning mill in 1790. Others soon followed. These Rhode Island mills, like the British ones on which they were modeled, hired whole families, especially those with numerous children.

Spinning, however, was but one step in the conversion of raw cotton into finished textiles. With the introduction by Francis Cabot Lowell of the first power loom into the United States in 1815, weaving too changed from a hand to an industrial operation. Together with other Boston capitalists seeking profitable investments, Lowell developed the first fully integrated cotton factories. The employment practices of the Boston Associates were as innovative as their factory organization. Establishing their factories at Lowell, Massachusetts, they soon transformed a small village into the nation's largest textile manufacturing center. By 1840 Lowell boasted thirty-two separate mills valued at more than $10,000,000 and staffed by some 8,000 operatives—most of whom were young women drawn from farms and villages in the surrounding New England countryside.

From its inception, the town of Lowell attracted widespread attention and favorable comment. Here in the New World the industrial order could succeed without demoralizing and debilitating the operatives. The "mill girls" seemed healthy and happy. After work they attended lectures or read books borrowed from the public

Silk mill at Paterson, New Jersey, in 1914. *Underwood & Underwood Stereo Card* **from Library of Congress.**

library. Some even edited a magazine, *The Lowell Offering*, to which others contributed stories and poems. Factory wages and the experience of living away from home gave the workers a sense of independence. Close ties with other women of similar age and background—living together in the company-sponsored boarding houses, as well as working together in the mills—engendered a sense of community.

Despite these amenities, factory work was oppressive. Terming themselves "daughters of liberty," operatives established the Lowell Female Labor Reform Association, agitated in favor of shortening the work day from twelve hours to ten, and protested cuts in wages. By midcentury, management's earlier humanitarian concerns—which some said had existed only to entice New England women into the mills—had all but disappeared. While lowering wages, management increased both the speed of the machines and the number of machines each operative tended. The vast immigrations were underway, opening a new source of cheap labor. As Yankee girls sought jobs elsewhere, Irish and French-Canadian immigrants took their places.

Changes in ethnicity and work conditions notwithstanding, textile mills remained the major source of nondomestic paid employment for women throughout the nineteenth century. In 1860, for instance, 71,549 women (and 43,406 men) worked in cotton manufacture; 16,126 women (and 24,471 men) worked in the woolen industry; and 1,996 women (and 583 men)

Winding shuttle bobbins for narrow fabric loom. Wood engraving after Winslow Homer in William Cullen Bryant, *Song of the Sewer* (New York, 1871).

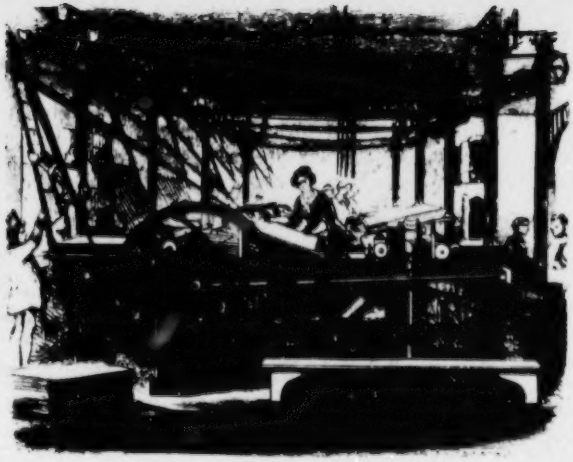
Making palm-leaf hats. From *Leslie's Illustrated Weekly Newspaper*, July 15, 1871, p. 293.

worked in the nascent silk industry.

Some women in textile mills were assigned tasks demanding skill and judgment. Most, however, were better described as "attendants" than as "operatives." They simply tended the machines—they did not operate them. They fed in the raw material, tied broken threads, and removed the finished product. Their desire for more challenging and lucrative employment, like that of so many working women, was repeatedly frustrated by an economy that demanded vast amounts of relatively unskilled labor.

Women, moreover, served as a marginal element in an unstable economy. They were available for work when needed, and discharged when not. Untold numbers of women worked at home—sticking pins into paper, for instance, or sewing clothes, weaving hats of straw or palm leaf, or forming artificial flowers. Although their hourly rate was low, their contribution to the family budget was often significant. In areas where farming was fast becoming unprofitable, the money women earned through such piecework may have been enough to sustain their rural way of life.

Acting on the false but widespread assumption that women could depend on others for support, or that if self-supporting, they had no dependents, employers could pay women low wages with a clear conscience. In fact, no matter what job they performed, women were paid women's wages, which were generally less than half as much as men in comparable situations could ex-



Workers at Harper & Brothers publishing house in New York City. From *Harper's New Monthly Magazine* 32 (1865), p. 16.

Tending a coining press. From George Evans, *Illustrated History of the United States Mint* (1891), p. 38.

pect. To quote a contemporary observer, the limited range of jobs open to women forced them to accept "less compensation for similar services than is paid to their more fortunate brethren who, if adequate remuneration is denied them in one line of business, have a multitude of employments to which they can turn."[6]

Textiles was but the first of many industries in which mechanization led to the employment of women. With the automation of printing presses in the 1830s, for instance, the only human action needed was that of a feeder—usually a woman or girl—who placed the paper so the press could get hold of it. Franklin Peale, who believed women to be at once more easily taught, quicker in movement, and more conscientious than men, began hiring them at the Mint in 1850—as "lady attendants" to the largely automatic machines.[7]

At the Watertown Arsenal during the Civil War, men filled the cartridges with powder, and women inserted the bullets. With the mechanization of cartridge manufacture in the 1870s, women were assigned the dangerous task of loading the powder. It was claimed that they were more dexterous and careful then men, but in truth these virtues were absorbed into the design of the machine. The women were simply cheap labor enabling the United States to lead world production in arms and ammunition. By the 1870s women also tended the various machines forming bullets and cartridges. One observer commented that they had "the careworn jaded look which necessarily attends an occupation so wearily

Wedging and grooving bullets at Remington & Sons, Ilion, New York. From *Scientific American* 45 (1831), p. 143.

A scene at the Union Metallic Cartridge Company in Bridgeport, Connecticut. From *Harper's Weekly* (October 13, 1877), p. 797.

Filling cartridges at the U.S. Arsenal, Watertown, Massachusetts. From *Harper's Weekly* (July 20, 1861).

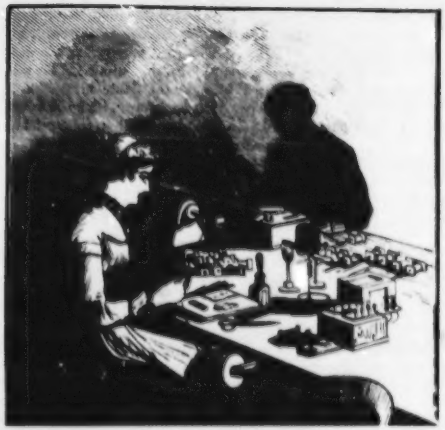
Various steps in the manufacture of electric light bulbs at the Swan Lamp Manufacturing Company in Cleveland, Ohio. From *Scientific American* 72 (1895), p. 224.

monotonous, and to which no speculation as to the success of their efforts adds an interest."[8]

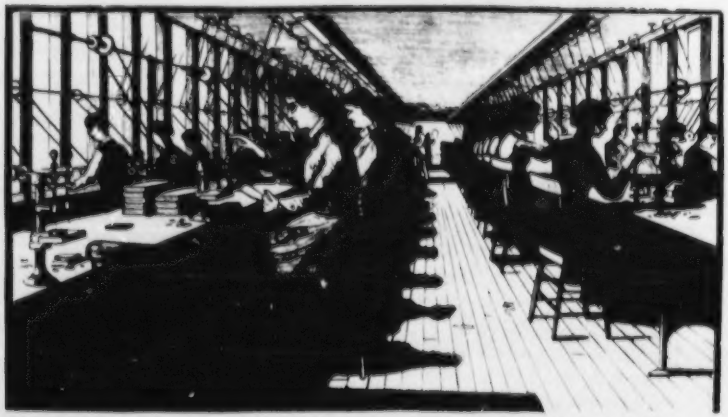
Despite the impressive array of new special-purpose machinery of which Americans were justifiably proud, a great many items were still assembled, finished, tested, and packed by hand—in many cases by the reputedly nimble fingers of women. Around 1860, when the first applications of electricity were being explored, women were paid "nearly one-half as much as men" to insulate the wires of small electric generators. By 1900 Westinghouse was employing more than 1,200 women and girls, whom they considered to be "particularly deft and skillful in work of this character."[9]

Americans revolutionized the process of watchmaking around 1850 by combining factory organization, specialized tools and machinery, and a fine division of labor. Company spokesmen boasted that "There are many important operations in the manufacture of watches by this method where the delicate manipulation of female hands is of the highest consequence." The jewels were shaped by machinery tended by girls "who acquire the requisite skill by a few weeks practice." One girl at $8 a week could do the work of four men formerly employed at $25 each.[10]

Watchmaking by the American method was a semi-skilled job, but many other manufacturing operations demanded little skill at all. Henry Troemner of Philadelphia, a leading manufacturer of weights and balances, expressed it well: "It requires almost a lifetime



Winding and inspecting coils at the American Bell Telephone Company. From *Scientific American* 51 (1884), p. 175.

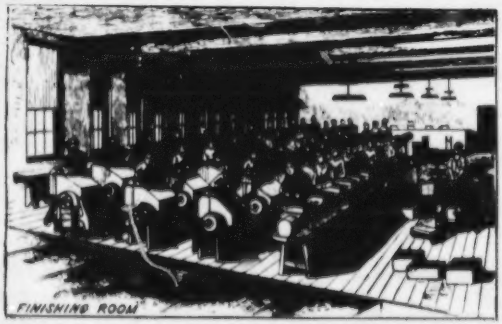


Workers at the American Watch Company, Waltham, Massachusetts. From *Scientific American* 51 (1884), p. 102.

to learn the business, but the part the women work at requires but a day or two."[11] The same could be said of such typically female tasks as smoothing the rough edges and sorting nails and type. As if to obscure the harsh realities of such work, spokesmen for Proctor & Gamble described those simple tasks assigned to women as having "picturesque phases which appeal to even a dainty aesthetical sense."[12]

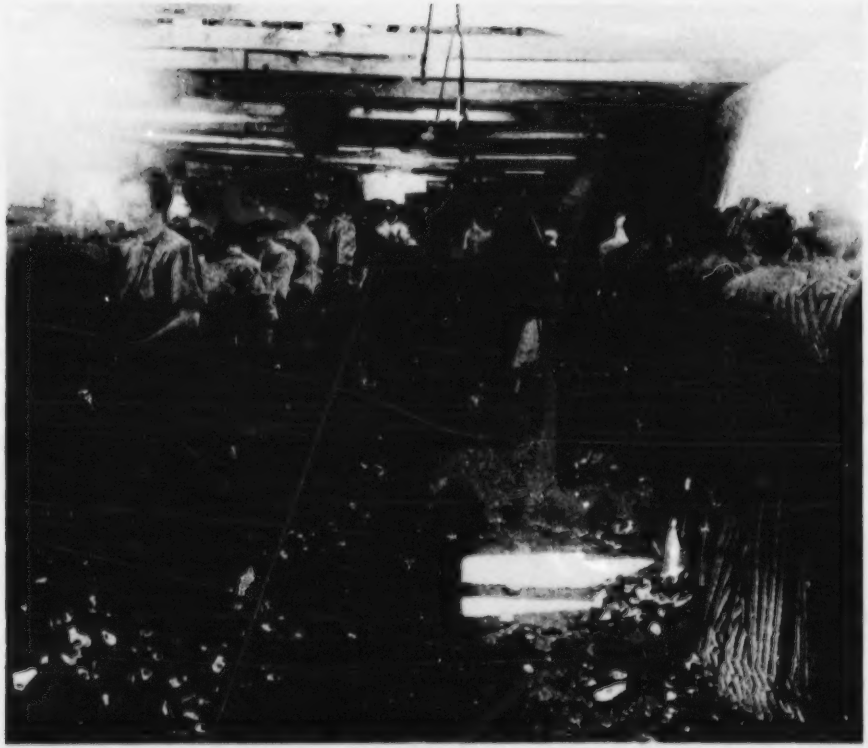
The rise of manufacturing brought the need for packaging, with attractive labels to identify and sell the products. Here was another vast field of employment for women with minimal marketable skills. With gluepots and nimble fingers women assembled and decorated paper boxes. In canneries across the country, from the 1850s onward, women shucked and sorted and peeled; they put food into cans and jars; and they affixed the labels, first by hand and later by machine. Even the drug companies, which expanded and multiplied in the period 1850–1900, depended heavily on female labor—to fill bottles with fluid extracts and to hammer in the corks, to form pills and tablets, to make and fill gelatine capsules and antitoxin syringes, and to pack the finished products into bottles and boxes.

Like industry, America's expanding commerce gave employment to women. Throughout the nineteenth century women continued to sell food in the market as they had in preindustrial times, whether in America or in their native Europe, Africa, or Asia. From the early days of mass marketing, far-flung networks of women



Finishing room at the Globe Nail Works, Boston, Massachusetts. From *Scientific American* 40 (1879), p. 127.

Sorting room at the Globe Nail Works, Boston, Massachusetts. From *Scientific American* 40 (1879), p. 130.



Shucking oysters at the Oyster House in Baltimore, Maryland. *Keystone Lantern Slide.*

Filling bottles with St. Jacob's Oil, and corking them, at A. Vogeler & Company, Baltimore, Maryland. From *Scientific American* 44 (1881), p. 194.

Using the biscuit board patented by Isaac R. Shank, 1859. From *Scientific American* 1 (1859), p. 253.

sold such things as magazine subscriptions, dress patterns, and tea to women in their neighborhood. Women with slightly greater resources opened small grocery or dry-goods shops, again catering primarily to women. Large specialty and department stores developed around midcentury. As this form of business became rationalized, women's opportunities for employment as "shop girls" increased—yet their prospects for advancement within the organization remained practically nil.

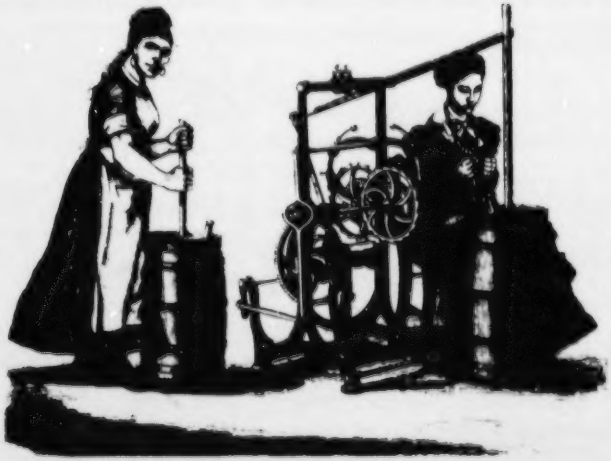
As the United States became a society of consumers, personal beauty as well as health care became big business. Countless women made their living selling beauty services and products. The first black millionaire was Sarah Breedlove Walker (1867–1919), who developed and marketed a method for hair care for black men and women.

Work is work, even if unpaid and done at home. But where money becomes the standard measure of worth—as happened in nineteenth-century America—work done "for free" is all too often seen as having low value and status. This was certainly true of domestic work and needlework, two occupations that might be considered as bridging the gap between the unskilled and the skilled. Some tasks were nothing more than menial, while others—such as flavoring a stew or baking light pastries in an uncertain oven—might partake of the sublime.

Women were said to be naturally domestic, but few women did all their own housework if they could get it

Sifting ashes. From *Scientific American* 38 (1878) p. 338.

Churn patented by A. D. Gale in 1870, in which the force of a weight or spring is placed "in strong contrast with that other domestic motive power, which good housewives have found so difficult to manage, and from which so many pray to be emancipated." From *Scientific American* 22 (1870), p. 46.



done another way. Poor women willing to work for low wages offered one alternative; technology offered another. Domestic service has traditionally been the major paid occupation for young, single, white women and for black women of all ages. They became domestics out of necessity, and they left as soon as something better became available—like factory work during World War I, for instance.

Whether done at home, in someone else's home, in a hotel, or in a commercial establishment, laundry was particularly poorly paid and arduous. Although essentially powerless to effect radical economic changes, working women have repeatedly asserted their right to decent treatment and adequate compensation. Members of the Troy Collar Laundry Union were said to have displayed an unfeminine militancy in their protests, as did the laundresses of Jackson, Mississippi, who, in 1866, published a schedule of uniform rates for their labor. This "Petition of Colored Washerwomen" was the first collective action of free black workingwomen in American history.

Almost all women sewed, and a great many sewed for money. The best milliners and dressmakers created works of art for their fortunate sisters—those fashionable women who proclaimed through the cut and richness of their dress that they could afford luxuries and that their labor was not needed in the household economy.

Ready-made clothing for men was becoming available

This clothes wringer invented by David Lyman in 1860, together with his washing machine of 1858, measurably lightened the labors of the "worst of all days of the week." "Next to the sewing machine we consider it the greatest woman's-labor-strength-and-health-saving-implement we have seen." From *American Agriculturist* 19 (1860), p. 247.

A step in the manufacture of shirts and collars at Geo. P. Ide, Bruce & Company, Troy, New York. From *Scientific American* 42 (1880), p. 303.

by the early 1800s. Tailors still cut out the pieces, but they increasingly farmed out the stitching to women, most of whom did piecework in their homes. By the 1850s there were factories making collars for men and corsets and hoopskirts for women, but in general in the garment trades, factory organization could not compete with homework or sweatshops until around 1900. In addition to clothing, women sewed umbrellas, the signatures of books, and the uppers of shoes.

"Lust is a better paymaster than the mill owner or the tailor."[13] Unable to make a living through "honorable" work, a great many women turned to prostitution. In 1856 there were some 5,000 known public prostitutes in New York, and proportionately large numbers in other cities. In 1870 two-thirds of the Chinese women in California worked as prostitutes. Many were recent immigrants who had been recruited for just that purpose. Like so many working women, "fallen women" played a vital role in preserving the middle-class stability from which they were excluded. Before the invention of reliable contraception, prostitution satisfied the (presumably uncontrollable) sexual needs of men, while offering their (supposedly asexual) wives freedom from repeated pregnancies.

While immigrant and black women were readily accepted for the less-skilled jobs, middle-class American-born women who sought paid employment in the so-called skilled trades had to argue strenuously that such work was not unfeminine. Their success was greatest in

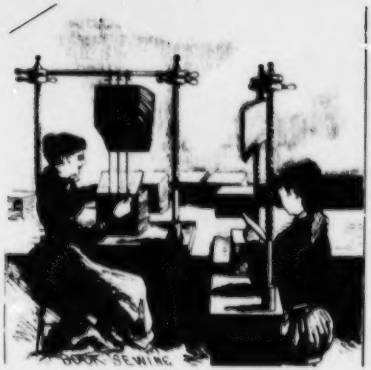
Cutting greenbacks at the Treasury Building in Washington, D.C. With its manpower shortages and abundance of women suddenly thrown on their own resources, war has repeatedly opened new jobs to women. In 1862 a few "deserving poor" were hired to trim the paper currency issued to finance the Civil War. Many were found to do "more and better work for $900 per annum than many male clerks who were paid double that amount." From Mary Clemmer Ames, *Ten Years in Washington* (1874), facing p. 317.

rapidly expanding fields where wages traditionally had been low.

The period 1800—1850 saw the rise of an indigenous American theater providing entertainment for people of all social classes. Although they outraged polite society, women in ever increasing numbers took to the stage to lecture, act, sing, and dance.

The demand for teachers kept pace with population growth throughout the nineteenth century, as Americans believed that for industry to succeed in a democratic society, citizens and workers must be literate and informed. But there were never enough educated men willing to work for the low wages offered teachers. By the 1830s colleges had been established to train women to be teachers, and the rationale that women were by nature better suited to nurture and instruct the young was widely heard. Later in the century women were accepted as librarians, less for their scholarship than for their ability to create a cozy, homelike atmosphere.

In the early years of the nineteenth century much clerical work was done as a cottage industry. Women at home copied official documents at 10 cents per 100 words. As business and government became large and complex, an army of educated clerks was needed to handle the vast amounts of new paperwork. Fortunately (or unfortunately) there were a great many educated women who needed paid employment just as badly as did the immigrant poor. Many government jobs were reserved for widows, daughters, and sisters of officers



Book sewing at the American Book Exchange, New York City. From *Scientific American* 43 (1880), p. 207.

Operating a typewriter with a foot treadle to return the carriage. *Scientific American* 27 (1872), p. 79.

killed or injured in the Civil War.

By 1900, 77 percent of all clerical workers were women, whose supposedly natural feminine attributes were well appreciated. For instance, Eliza Burnz, the first woman in the United States to earn her living taking shorthand, argued that "Shorthand writing is very artistic work, and is well suited to the finer nature and more delicate organization of womankind."[14] Under Burnz's stimulus the Cooper Union in New York opened a free school of shorthand for women in 1872.

The typewriter did not bring women out of the home and into the workplace, as has been claimed, but its invention and early commercial success did coincide with the expansion of white-collar jobs deemed appropriate for middle-class women. Remington, which put its first model on the market in 1874, had sold more than a half-million machines by 1900. Early models sat on a sewing machine base; a foot treadle returned the carriage. Most were operated by women.

Typing was one thing, but typesetting was another. In the colonial period it was not uncommon for a woman to learn to set type from a male relative, and to continue the printing business after he died or turned to other matters—and a number of women continued this work in the nineteenth century. But outside of family establishments, women were in constant conflict with men seeking profitable employment. Unions were reluctant to admit women or to help them obtain the training needed for the more difficult tasks. Since

Working with the Ferrel tide predictor at the U.S. Coast & Geodetic Survey. From *Scientific American* 96 (1907), p. 69.

women could not command union scale, they were forced to accept jobs in nonunion shops and as scabs during strikes. "There is very much typesetting that women can do as well as men could, and considerably cheaper, while making far better wages than they could otherwise secure. . . ." claimed Horace Greeley who, as publisher, could use inexpensive typesetters to good advantage.[15]

By the 1880s the era of big science had begun. Scientific entrepreneurs were not far behind their counterparts in industry and commerce in recognizing the efficiency and economics of a division of labor. In their effort to attract women into science, and to convince men to hire them, even leading feminists stressed women's gender-related qualifications for work in this field. Routine data processing could be done as well by women "well trained in technical methods and possessed of patience and conscientiousness" as by fully trained (male) scientists who could command much larger salaries. "While we cannot maintain that in everything woman is man's equal, yet in many things her patience, perseverance and method make her his superior," claimed Williamina Fleming, curator of Astronomical Photographs at Harvard.[16]

The first major use of punched-card data-processing equipment occurred in 1890, when the United States census was tabulated by machine. Both men and women were employed to record and read the data, but women were found to be so much more efficient that

Tabulating the 1890 census by machine. From *Scientific American* 63 (1890), p. 127.

A view of the American Bell Telephone exchange in the 1880s. From *Scientific American* 51 (1884), p. 175.

they had the field to themselves in 1900.

Most telegraph operators were men. The few women who trained for the job and found employment were paid according to their gender. The invention of the telephone in 1876 and its wide diffusion soon thereafter opened thousands of respectable new jobs. Almost all operators were well-bred girls—young and unmarried—who spoke good English and were seduced by the common rhetoric that this work demanded "just that particular dexterity, patience and forebearance possessed by the average woman in a degree superior to that of the opposite sex."[17]

> The history of mankind is a history of repeated injuries and usurpations on the part of man towards women. . . . He has monopolized nearly all the profitable employments, and from those she is permitted to follow she receives but a scanty remuneration. He closes against her all the avenues to wealth and distinction which he considers most honorable to himself.[18]
>
> Declaration of Sentiments
> Seneca Falls, N.Y., 1848

As Elizabeth Cady Stanton and other delegates to the women's rights conference at Seneca Falls clearly recognized, the learned professions proved extremely resistant to encroachment by women. Until well into the twentieth century, the law and the church remained closed to all but the most intrepid female pioneers.

Health care was a properly feminine activity, as long as it was provided for free, for one's own family. Despite their supposedly delicate nature, women at home were expected to nurse even the most ghastly wounds and painful illnesses. Many were active in the various reform movements that flourished alongside orthodox medicine, in part in reaction to it. Among the numerous women who packaged their home remedies and sold them to others, Lydia Pinkham was surely the most famous. Her "Vegetable Compound" promised soothing relief for most female complaints—and probably caused much less harm than the heroic medicines and procedures offered by many regular doctors.

As a job, nursing was regarded as somewhat akin to domestic service. Drawn from the lower classes and poorly paid, nurses in the early nineteenth century were often expected to watch the children and wash the dishes as well as care for the patient. The thousands of women who served as nurses during the Civil War opened the door to nursing as a respectable, paid occupation. Inspired by the example of Florence Nightingale in England, Americans established the first professional school of nursing here in 1873.

The number of trained doctors rose dramatically in the early years of the nineteenth century, and increasingly they were called in to deliver health care for a fee. The first American medical schools were for men only. After exerting intense pressure, women began to gain admission around 1850, and then largely on the understanding that female doctors would specialize in the diseases of women and children.

The notion of separate spheres and gender differences was incredibly strong. Wherever women or men looked, the message remained the same. To the extent they believed it, the message acquired a measure of veracity. Women who had been sewing since childhood, and who had been advised repeatedly to be patient and persevering, probably were better adapted for the jobs usually assigned to women than were men trained to be ingenious and decisive.

But time and again women's experiences taught them that the message was largely a lie, and they began to question the motives that kept it alive. Working with others, they learned that the narrow definition of True Womanhood did not fit all women—and that many men did not fit the masculine stereotype. They saw also that women were limited by gender in ways that men were not. For women, ability in one area seemed reason enough for exclusion from another. Women's experiences in the workplace and, however meager, the economic freedom they found there, contributed in important ways to the women's rights movement. Recognizing their individual diversity, women were able to develop a sense of community. Banding together as sisters they joined the chorus of women demanding education, property rights, the vote, and an end to the various forms of patriarchal domination.

Notes

1. [Mary Townsend], *Life in the Insect World* (Philadelphia, 1844).

2. Packer Collegiate Institute, *Circular and Catalogue* (New York, 1861), p. 5.

3. Quoted, among other places, in Elizabeth Cady Stanton et al., *History of Woman Suffrage* (1881), vol. I, p. 116.

4. Alexander Hamilton, *Report on Manufacturers*, quoted in Edith Abbott, *Women in Industry* (New York, 1910), p. 50.

5. Quoted in William Cahn, *Lawrence 1912: The Bread and Roses Strike* (New York, 1980), p. 40.

6. "Female Telegraph Operators," *The Telegrapher* 8 (1871–72), p. 396.

7. Alice Neal, "The Mint Coin Adjusters," *Godey's Lady's Book* 45 (1852), pp. 125–29.

8. Alden Hatch, *Remington Arms. An American History* (1956), p. 111–12; *New Century for Woman* (1876), p. 105.

9. *The Pittsburgh Electrical Handbook* (1904), p. 52.

10. James Watson, "Horological Instruments," of Judges' Report, Group XXV, in U.S. Centennial Commission, *International Exhibition 1876. Reports and Awards* (Washington, D.C., 1880); *The American Watch Company, Mass., and American Watches* (n.d.), p. 4.

Quoted in Virginia Penny, *The Employment of Women* ...ston, 1863).

12. "The Manufacture of Candles," *Scientific American* 45 (1881), p. 387.

13. Caroline Dall, *Woman's Right to Labor* (1860), p. 5.

14. Quoted in Mrs. M. L. Rayne, *What Can a Woman Do* (1893), p. 123.

15. Quoted in Mary Biggs, "Neither Printer's Wife nor Widow: American Women in Typesetting, 1830-1950," *The Library Quarterly* 50 (1980), p. 439.

16. Mary Putnam Jacobi, "Women in Science," in May Wright Sewell, ed., *The World's Congress of Representative Women* (Chicago, 1894), pp. 195–207; Williamina Fleming, "A Field for Woman's Work in Astronomy," *Astronomy and Astrophysics* 12 (1893), p. 683.

17. Quoted in Brenda Maddox, "Women and the Switchboard," in Pool, ed., *The Social Impact of the Telephone* (Cambridge, 1977), p. 226.

18. Quoted, among other places, in Aileen Kraditor, ed., *Up from the Pedestal* (Chicago, 1968), p. 185.

References

Abbott, Edith. *Women in Industry*. New York and London, 1910; reprint, 1973.

Baxandall, Rosalyn, Gordon, Linda, and Reverby, Susan, comp. and ed. *America's Working Women*. New York, 1976.

Dublin, Thomas. *Women at Work: The Transformation of Work and Community in Lowell, Massachusetts, 1826–1860*. New York, 1979.

Foner, Philip S. *Women and the American Labor Movement*. New York, 1979.

Stein, Leon, ed. *Out of the Sweatshop*. New York, 1977.

Wertheimer, Barbara Mayer. *We Were There: The Story of Working Women in America*. New York, 1977.

"Women and the Workplace: The Implications of Occupational Segregation." *Signs*, vol. 1, no. 3, pt. 2 (Spring 1976 supplement).